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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/821,071  
Filing Date: April 08, 2004  
Appellant(s): FISHER, DANIEL J.

**MAILED**

**SEP 20 2007**

**Group 3700**

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For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed June 18, 2007 appealing from the Office action mailed January 17, 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

3,527,001	Kleemeier et al.	9-1970
6,394,887	Edinger	5-2002

6,210,389	Long et al.	4-2001
4,617,767	Ali	10-1986
3,875,703	Clemente	4-1975
5,807,161	Manor et al.	9-1998

U.S. Patent Publication No. 2001/0001088 A1, Chesley et al. 5-2001

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### **I. First Grounds of Rejection**

Claims 28-32 rejected under 35 U.S.C. 102(b) as being anticipated by Kleemeier (3,527,001).

In reference to claim 28, Kleemeier discloses a conversion pad (either 13, 14 & 15 or 14 & 15 alone) for attaching an abrasive article to the back-up pad of a sanding tool (the attachment to a back-up pad is intended use; however, in the case that the conversions pad is layers 14 and 15, the conversion pad is attached to back-up pad 13 or in the case that the conversion pad is considered to be layers 13, 14 and 15, the conversion pad is inherently capable of being attached to a back-up pad), said conversion pad comprising first and second opposed major surfaces, said first major surface being adapted for engagement with the back-up pad (again, intended use, but both interpretations of the conversion pad of Kleemeier are inherently capable of engagement with the back-up pad) and said second major surface including an attachment surface (surface of 14 having fasteners) including attachment material (15, formed by 16 and 17) for attaching said conversion pad with an abrasive article and a

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non-attachment surface along at least a portion of an edge region of said second surface (there is clearly an annular portion around the outer edge of the first major surface that does not have any attachment material), thereby to allow a user to grasp the abrasive article and separate the abrasive article from the conversion pad, wherein said attachment surface and said non-attachment surface each terminate opposite said first major surface, and further wherein said attachment and non-attachment surfaces are co-planar opposite said major surface. Thus, the resin layer (14) forms the non-attachment region on the outer peripheral edge, which has no attachment material, and the surface of the resin layer (14) that has attachment material (16 and 17) forms the attachment surface, which is co-planar with the non-attachment surface. Further, even if the entire length of the attachment materials (16 and 17) are considered to form the attachment layer, at least a portion of each of the attachment fibers is co-planar with the non-attachment surface on the face of the resin layer (14), thus making at least a portion of the attachment layer co-planar with the non-attachment layer.

In reference to claim 29, Kleemeier further discloses that said non-attachment region comprises a continuous edge region extending along the entire perimeter of said second surface, as discussed supra.

In reference to claim 30, Kleemeier further discloses that said attachment surface comprises a plurality of mechanical fastening elements.

In reference to claim 31, Kleemeier further discloses that said mechanical fastening elements comprise hook-type fastening elements (seen in figures 3 and 4).

In reference to claim 32, Kleemeier further discloses that said conversion pad is circular and said non-attachment region comprises an annular region extending along the entire perimeter of said second surface.

## **II. Second Grounds of Rejection**

Claims 1-7, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleemeier (3,527,001) in view of Edinger (6,394,887).

In reference to claim 1, Kleemeier discloses a conversion pad (13, 14 & 15 or 14 & 15 only) for attaching an abrasive article to the back-up-pad (12 or 13) of a sanding tool, said conversion pad having an engagement surface releasably attached to the back-up pad and an attachment system comprising a first major surface including an attachment region (15) with attachment material for attachment with an associated mating surface, and a non-attachment region along at least a portion of an edge (there is clearly an annular portion around the outer edge of the first major surface that does not have any attachment material) of said first major surface for forming an attachment with the associated mating surface that is weaker (the lack of attachment material will provide no attachment, which is weaker than the attachment between attachment region and the associated mating surface) than the attachment between the attachment region and the associated mating surface, whereby a user can inherently grasp a portion of the abrasive article adjacent the non-attachment region and thereby separate the abrasive article from the first major surface. However, Kleemeier fails to disclose that the engagement surface releasably attached to the back-up pad is a non-adhesive

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engagement surface. Edinger discloses a similar conversion pad providing multiple attachment systems to attach an adhesive article to a sanding tool and teaches that multiple attachment systems, such as adhesives, hook and loop fasteners or magnets, may be alternately be substituted for one another to accommodate different tools or abrasive articles and that different attachment systems may be desirable for different applications. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the adhesive used to attach the conversion pad (13 and 14) of Kleemeier to the back-up pad (15) of Kleemeier may alternatively be replaced by other attachment systems such as either of a hook and loop fastener or a magnet to accommodate different back-up pads having a corresponding attachment system on a major side thereof. It is further disclosed that the hook or loop attachment systems may be attached to a major surface the conversion pad using an adhesive, however, even if this is the case, the major surface of the conversion pad that will be releasably attached to the back-up pad would have an engagement surface of the hook or loop fastener system, which is non-adhesive.

In reference to claim 2, it would further be obvious that said attachment system comprises a first major surface of said conversion pad, the second major surface opposite said first major surface of said conversion pad has a non-adhesive engagement surface, which is adapted to engage the back-up pad of the sanding tool (10).

In reference to claim 3, the attachment region on the first major surface of the conversion pad disclosed by Kleemeier is inherently capable of to form a releasable

connection with an associated mating surface of an abrasive article wherein the associated mating surface comprising a first major surface of the abrasive article, said abrasive article having a second major surface opposite said first major surface including abrasive for abrading a work surface, said releasable connection characterized as being sufficiently secure to resist relative movement of said abrasive article relative to said conversion pad when rotating said abrasive article as part of a sanding operation (col. 2, lines 6-11). Chesley et al. (2001/0001088) is cited as extrinsic evidence that the attachment material disclosed by Kleemeier is capable of releasably engaging an abrasive article as disclosed in claim 3. Chesley discloses several different hook type fasteners that are capable of releasably engaging loop type materials that may be applied to an opposing surface and the fastener elements 16a and 17a, disclosed by Kleemeier, are very similar in structure to fastener elements shown in 2c, 2m and 2h, respectively. Chesley also discloses that the loop type materials are often provided on a first major surface of abrasive articles, having abrasive material on a second major surface opposing the first. Therefore, it is further obvious that the fastener elements disclosed by Kleemeier are capable of releasably engaging an abrasive article having the loop type material on the first major surface, as disclosed by Chesley.

In reference to claim 4, Kleemeier further discloses that said attachment region comprises a centrally located region of said first major surface and said non-attachment region comprises a continuous edge region extending around the entire perimeter of said first major surface, as discussed supra.



In reference to claim 5, Kleemeier further discloses that said attachment surface comprises a plurality of mechanical fastening elements.

In reference to claim 6, Kleemeier further discloses that said mechanical fastening elements comprise hook-type fastening elements (seen in figures 3 and 4) and similar to the hook type elements disclosed by Chesley, as discussed supra.

In reference to claim 7, Kleemeier further discloses that said attachment region is a circular region covering a majority of said first major surface and said non-attachment region comprises an annular region extending around the entire perimeter of said major surface.

In reference to claim 14, Kleemeier further discloses that said attachment region and said non-attachment region are co-planar. The resin layer (14) which forms the non-attachment region has one end of the attachment members (16 or 17) of the attachment region disposed therein, thus the attachment region and non-attachment region have sections that are located within the same plane and are thus, co-planar.

In reference to claim 15, Kleemeier further discloses that the conversion pad and the abrasive article have substantially the same profile and have aligned outer edges (in the case that the conversion pad is considered to be layers 13, 14 & 15 all used together).

### **III. Third Grounds of Rejection**

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleemeier (3,527,001) in view of Edinger (6,394,887) as applied to claim 1 and further in view of Long et al (6,210,389).

In reference to claims 8 and 9, the combination of Kleemeier disclose the attachment system as discussed supra, wherein the non-attachment region of Kleemeier inherently provides an area that allows a user to easily grip the abrasive article for removal, but fails to disclose that the non-attachment region includes fastening elements that have been bent to inhibit attachment of said fastening elements with said associated mating surfaces. Long discloses a fastening system with a lifting region that provides a hook and loop fastening system with an attachment region (52) and a non-attachment region (41) wherein the hook-type fastening elements of the non-attachment region are bent to inhibit attachment of said fastening elements. The attachment system of Long would be more versatile because the attachment material is attached to the entire surface and any desired portion of the hook-type fasteners may be bent to provide a non-attachment region. Also, the hook-type fastening elements are easily bent to inhibit fastening, so it would be easier to produce the conversion pad by merely cutting or forming a piece of material to the desired shape and size, having the hook-type fasteners over the entire surface and modifying the desired portion to be the non-attaching region than to produce the conversion pad disclosed by Kleemeier, which is custom formed so that only certain portions of the pad contain the hook-type fasteners. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide one entire surface of the Kleemeier invention

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with hook-type fastening elements and to bend the hook-type elements in the region that is desired to be non-attaching (in this case around the entire perimeter of the surface), as taught by Long, to provide any desired portion of the attachment surface as the non-attachment region.

#### **IV. Fourth Grounds of Rejection**

Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleemeier (3,527,001) in view of Long et al (6,210,389).

In reference to claim 33, the conversion pad of claims 28 and 30-32, as disclosed by Kleemeier fails to disclose that the non-attachment region includes fastening elements that have been altered to inhibit attachment of the conversion pad with the abrasive pad. Long discloses the fastening system and teaches the advantages of bending the fastening elements, as discussed supra. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide one entire surface of the Kleemeier invention with hook-type fastening elements and to bend the hook-type elements in the region that is desired to be non-attaching, as taught by Long, as discussed supra.

In reference to claim 34, Kleemeier further discloses that the conversion pad and the abrasive article have substantially the same profile and have aligned outer edges (in the case that the conversion pad is layers 13, 14 & 15 because the abrasive article and pad 13 have the same outer profile and aligned outer edges).

## **V. Fifth Grounds of Rejection**

Claims 37, 38 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleemeier (3,527,001) in view of any one of Ali (4,617,767), Edinger (6,394,887), Clemente (3,875,703) and Manor et al (5,807,161).

In reference to claim 37, Kleemeier discloses an abrading tool including a back-up pad (13), a conversion pad (14 and 15) connected with the back-up pad (layer 13 is adhered to layer 14; col. 2, lines 41-43), and an abrasive article (20) connected with the conversion pad, wherein the back-up pad and the abrasive article have substantially the same profile and have aligned outer edges, and further wherein the conversion pad comprises first and second opposed major surfaces, said second major surface including an attachment region including attachment material (15) for attaching said conversion pad with the abrasive article and a non-attachment region along at least a portion of an edge region (there is clearly an annular portion around the outer edge of the first major surface that does not have any attachment material) of said second surface, thereby to allow a user to grasp the abrasive article and thereby separate the abrasive article from the conversion pad. However, Kleemeier fails to disclose that the conversion pad also has the same profile and aligned outer edges with the back-up pad and the abrasive article. It is well known in the art that combinations of back-up pads, conversion pads and abrasive articles may often use combinations of different sized layers, specifically with circular abrasive pad combinations, the layers may have different diameters, and more commonly it is well known that all layers may have the same profile and aligned outer edges, as disclosed by Ali 4,617,767, Edinger 6,394,887,

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Clemente 3,875,703 and Manor et al 5,807,161, in order to provide the outer edge of the abrasive article with sufficient support, because it is also well known that the outer edge of similar abrasive discs is often used more and has more pressure exerted thereon than the inner parts of the pad. Thus, support of the outer region is necessary to prevent damage to the outer edges of the abrasive article. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that different sized combinations of back-up pad, conversion pad and abrasive article may be used with the Kleemeier apparatus and further obvious that it would have been desirable to provide a conversion pad of Kleemeier that has the same profile and aligned outer edges with the back-up pad and abrasive article, as disclosed by Ali, Edinger, Clemente and Manor, to provide sufficient support to outer edges of the abrasive article, to prevent damage.

In reference to claim 38, Kleemeier further discloses that the back-up pad, conversion pad and abrasive article are circular.

In reference to claim 41, Kleemeier further discloses that the conversion pad is removably connected to the back-up pad. Kleemeier discloses that the back-up pad is adhered to the conversion pad, and it is inherent that the two parts, being connected with adhesive, may be removed from one another, either by peeling them apart or by using chemicals to break down the adhesives.

## **VI. Sixth Grounds of Rejection**

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kleemeier (3,527,001) in view of any one of Ali (4,617,767), Edinger (6,394,887), Clemente (3,875,703) and Manor et al (5,807,161), as applied to claim 37 and further in view of Long et al (6,210,389).

As discussed supra, it is obvious, in view of Long, to replace the attachment and non-attachment surfaces of Kleemeier with one entire surface of hook-type fastening elements and to bend the hook-type elements in the region that is desired to be non-attaching, as taught by Long, to provide any desired portion of the attachment surface as the non-attachment region. In this case, the conversion pad (13 and 14) includes a backing defining a first major surface (disclosed in claim 37 as being opposite the surface having the attachment and non-attachment surfaces; thus, the first major surface is the surface of layer 14 that is engaged with the back-up pad 15) and a plurality of fastening elements is extending across the entirety of the face of the backing opposite the first major surface, which is the second major surface having the attachment and non-attachment surfaces.

## **(10) Response to Argument**

### **I. First Grounds of Rejection**

The appellant argues that the non-attachment layer is not co-planar with the attachment surface in the Kleemeier reference because the appellant asserts that the "attachment surface" is defined by the terminal ends of the fibers (16 and 17) of Kleemeier. However, the Kleemeier reference clearly reads on the claimed subject

matter that "the second major surface (14 of Kleemeier) includes an attachment surface (still face of 14) including attachment material (the attachment material is the fibers 16 and 17) for attaching said conversion pad with an abrasive article (20) and a non-attachment surface (outer circumferential edge of the same surface of layer 14)".

Therefore, the "attachment surface" of Kleemeier, which has attachment material, is clearly defined at the surface of layer 14, which is also clearly co-planar with the non-attachment surface. If the attachment surface is only defined by the terminating ends of the attachment members, as implied by the appellant in the arguments and comments, then the limitation that the attachment and non-attachment surfaces are co-planar is only represented by the appellant's embodiments shown in figures 5a, 5b, 6a and 6b, which are non-elected species (election requirement dated 10/4/2005, response filed 10/24/2005) based on the elected species being defined as the non-attachment region being provided by altering the mechanical fasteners in the non-attachment region by bending the mechanical fasteners, which is only represented in Figures 1 and 2. Thus, for the examiner's rejection, regarding the attachment and non-attachment surfaces being co-planar, to be overcome by the appellant's argument defining the attachment surface as being "limited to the terminating ends of the attachment members", claims 28-34 would effectively be withdrawn as reading on previously non-elected species.

## **II. Second Grounds of Rejection**

The appellant argues that the combination of Kleemeier and Edinger, as discussed supra and in the Final Rejection, fails to make obvious claims 1-7, 14 and 15

because the appellant asserts that neither Kleemeier nor Edinger disclose a "conversion pad". The appellant defines a conversion pad as "a pad for accommodating abrasive discs with different attachment systems". However, as discussed, the Examiner indicated either layers 13, 14 and 15 as the conversion pad or layers 14 and 15 alone as the conversion pad. In both cases the upper most layer (13 or 14 respectively) are attached to the next uppermost layer using adhesive, which is inherently removable, while the lowermost layer (15 in both cases) provides a mechanical hook type fastener, thus accommodating an abrasive disc having a mechanical loop type fastening system to attach to a layer (12 or 13, respectively) that does not have a mechanical loop type fastening system. Therefore, either section of Kleemeier that is considered by the Examiner to be the conversion pad does function exactly as the appellant defines a conversion pad. Although Kleemeier does not disclose the layer separate from the entire abrasive holder, the layers that are included in the Kleemeier reference clearly function as a conversion and read on all of the claimed limitations except for the limitations that are taught by Edinger. Edinger also discloses a conversion pad (disclosed as an adapter) that is disclosed as having the exact function as the appellants "conversion pad". Edinger additionally teaches that the conversion pad may be used to convert any of adhesive, mechanical (hook and loop) or magnetic attachment systems of a support (12) to accommodate any one of these attachment systems that the support is not designed to accommodate. Thus, providing the motivation to replace the adhesive attachment between the "conversion pad" (13, 14 and 15 or 14 and 15 alone) of Kleemeier to the next uppermost layer with another



different attachment system to allow the same abrasive disc to be attached to different supports (12 or 13, respectively, of Kleemeier), as discussed supra.

### **III. Third Grounds of Rejection**

The appellant first argues the combination of the Kleemeier and Long references because the appellant asserts that the fastening system of Long, which is intended for baby diapers, is ill-suited for attaching adhesive articles to a sanding tool because the fastening system of Long would not be strong enough to hold an abrasive article under sanding conditions. However, in combining the secondary Long reference with the base Kleemeier reference, the Examiner is not replacing the actual mechanical fasteners of Kleemeier with the fasteners of Long. The Examiner is merely applying the teaching of Long that mechanical hook-type fasteners may be bent or folded down to provide a non-attachment section to make it easier for a user to grip one of the sides being held by the attachment system to remove the layers from one another.

The appellant also argues that the combination is improper because the Long reference is non-analogous art to the Kleemeier reference. The appellant even cites the position of the Federal Circuit that "A reference is reasonably pertinent if...it is one which, because of the matter with which it deals, logically would have commended itself to the inventor's attention in considering his problem...If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem". The appellant further stresses that it is necessary for the reference to relate to the same problem that the inventor of the current application is concerned with. In this case, the

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sole purpose for the inventor to provide the non-attachment section of the conversion pad is to make it easier for a user to grip one of the sides being held by the attachment system to remove the layers from one another, as is indicated repeatedly in the specification that "the connection between the non-attachment region and the associated mating surface is preferably sufficiently weak to allow a user to manually grasp the abrasive article in the area adjacent the non-attachment region and separate the abrasive article from the sanding tool" (first occurrence in lines 3-6 on page 3 of the specification). Thus it is clear that the Long reference relates to the exact same problem as the problem that the appellant is attempting to overcome by providing the non-attachment region, making the Long reference pertinent prior art. Further, the recent KSR decision cites a Teaching, Suggestion or Motivation (TSM) test that states that a patent claim is prima facie obvious if "some motivation or suggestion to combine the prior art teachings" can be found in the prior art, the nature of the problem, or the knowledge of a person having ordinary skill in the art. In this case, the Long reference clearly indicates that the bending of hook-type fasteners will make it easier for a user to remove one layer from another that are attached using the hook and loop type fasteners, which is the nature of the problem that the appellant is intending to solve, thus, clear motivation is provided in the prior art.

#### **IV. Fourth Grounds of Rejection**

The appellant argues the fourth grounds of rejection with the same arguments as the First and Third Grounds of Rejection, to which the Examiner has responded to above.

## **V. Fifth Grounds of Rejection**

The appellant argues the combination of the Kleemeier reference with any of the Ali, Edinger, Clemente or Manor references as failing to establish a *prima facie* case of obviousness. First, the appellant argues that the Kleemeier reference teaches away from the claim because Kleemeier specifically discloses that rubber layer 13 (indicated as the back-up pad by the Examiner in rejection of claims 37, 38 and 41) has a larger diameter than plate 12 and illustrates the conversion pad (14 and 15) and the filament heads (16 as part of the conversion pad) as having a smaller diameter than the rubber layer (back-up pad 13). However, as applied to the rejection above, the Kleemeier reference provides the back-up pad (13), the conversion pad (14 and 15) and the abrasive article (20), wherein the back-up pad and the abrasive article have the same diameter but the claim does not include a hard backing layer, that would be represented by plate 12 of Kleemeier, nor does it disclose that the hard backing layer would have the same profile and aligned outer edge with the back-up pad, conversion pad and abrasive article. Thus, the disclosure of Kleemeier that the back-up pad 13 is larger than the hard backing plate 12 is irrelevant to the claim. Further, the claim only discloses that the conversion pad as a whole has the same profile and aligned outer edge with the back-up pad and the abrasive article but does not disclose that the attachment surface

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also has the same profile and aligned outer edge, thus it is also irrelevant to the claim that Kleemeier shows the section attachment region formed by fibers 16 and 17 as having a smaller diameter than the back-up pad and the abrasive article as long as the prior art teaches that it would be obvious for the outer edge of the conversion pad, as a whole (including 14, 15 and 16), may be aligned with the outer edges of the back-up pad and the abrasive article, as discussed in the claim rejections above. Additionally, other than the drawings, Kleemeier is silent as to why the diameter of conversion pad layer 14 and 15 is shown as being smaller than the diameter of the back-up pad or the abrasive article, thus, although Kleemeier does not disclose that the conversion pad has aligned outer edges, Kleemeier does not provide any disclosure that would be considered to teach away from this claim limitation.

The appellant also argues that the secondary references (Ali, Edinger, Clemente and Manor) fail to recognize or address the concern that is disclosed by Kleemeier to prevent damage to a wall. However, the criterion for determining prima facie obviousness does not require that the secondary references provide the same motivation as the base reference. In this case all of the secondary references disclose multi-layer abrasive articles, all of which having outer edges of multiple layers, all aligned with one another (the Edinger reference specifically showing a conversion pad 32 and abrasive article 24 having aligned outer edges), which it is obvious to one of ordinary skill in the art will provide the entire abrasive article with sufficient support to prevent damage to the outer edges of the abrasive article, which may lead to damage of the surface being abraded. Thus, sufficient motivation is provided by the references

and by the knowledge of one having ordinary skill in the art to modify the Kleemeier reference such that each of the back-up pad, conversion pad and abrasive article with the same profile and aligned outer edges.

Finally, the appellant argues that there is no reasonable expectation of success in the modification of the Kleemeier reference. However, the mere fact that multiple references, cited as the secondary references and many more that were not cited, all disclose multiple layer abrasive supports having all layers with the same profile and aligned outer edges, supports that it is well known in the art to have multiple layers aligned and that the abrasive tools having multiple aligned layers would provide successful results. The appellant's additional argument that aligning multiple layers would likely result in at least some offset error, resulting in at least one of the layers not being perfectly aligned, is completely speculative, and is not supported by any of the prior art references. Further, the same effect may occur with the appellant's invention, just as easily resulting in negative effects as any of the prior art references. Thus, the offset error suggested by the appellant is not a relevant argument against providing multi-layer abrasive tools with all layers having the same profile and aligned outer edges.

#### **VI. Sixth Grounds of Rejection**

The appellant argues the Sixth grounds of rejection with the same arguments as the Fifth Grounds of Rejection, to which the Examiner has responded to above.

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**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Bryan R. Muller



Patent Examiner

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Conferees:

Joseph J. Hail III



Supervisory Patent Examiner

Art Unit 3723

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